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PROPENSITY TO REPORT PARANORMAL EXPERIENCES IS CORRELATED WITH TEMPORAL LOBE SIGNS

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Summary.—Bivariate correlation analyses indicated that people who reported greater numbers of different types of paranormal experiences also reported greater numbers of temporal lobe signs. Whereas responses of one group ($n = 108$) of male and female university students gave a correlation of 0.60 between the two measures, for another group ($n = 41$) the correlation was 0.72. Partial correlation analyses, which involved holding the shared variance with affirmative responses to mundane psychological statements or odd sensations constant, did not alter the strength of the relationship. These results support the hypothesis that spontaneous paranormal experiences and the psychological components of complex partial (psychomotor) epilepsy may exist along the same continuum of temporal lobe sensitivity.

Conspicuous apparent similarities exist between putative paranormal experiences and those evoked by direct or inferred stimulation of deep (mediobasal) structures within the temporal lobe of the human brain. In fact all of the affective and spatial-temporal alterations characteristic of spontaneous telepathy/clairvoyant, "out-of-body" and precognition reports may be identified within the experiential records of people who are diagnosed with "temporal lobe" (complex partial) epilepsy or who are stimulated electrically in focal mesiobasal temporal lobe regions; for a review, see Persinger (1983). An empirical relationship between "sensitive" groups of people who frequently report mystical and paranormal experiences and an increased incidence of temporal lobe signs (TLS) has been reported recently both by Fenwick (1983) and by Neppe (1983). The latter author also referred to an unusually high incidence of aberrant electroencephalographic activity over the temporal lobes of such subjects.

According to one hypothesis (Persinger, 1974, 1983), mystical/religious experiences in general and paranormal experiences in particular are symptoms that reflect a continuum of temporal lobe activity. Given the intrinsic electrical and functional properties of deep structures (hippocampal-amygdaloid complex), all human beings should be prone to various types and numbers of these experiences which are in turn triggered by a variety of environmental, psychosocial, and biochemical stimuli. A quantitative relationship should exist between the frequency and forms of paranormal experiences and the

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frequency or types of other experiences that reflect temporal lobe "sensitivity." This prediction was tested by comparing the scores of two populations (Group I, $n = 108$; Group II, $n = 41$) of university students whose responses to a 140 statement "Personal Philosophy Inventory" (Persinger, 1984) were compared with a subset of statements from that inventory which reflected classic paranormal experiences.

Scores for the percentage of "yes" responses (or the equivalent) to 29 statements from the temporal lobe cluster (Persinger, 1984), another 10 statements concerned with normal psychological responses, e.g., "Most nights I go to sleep without thoughts or ideas bothering me," 5 more statements indicating odd sensations (as a control for simply reporting "yes" to any odd experience), and another 7 statements referring to paranormal experiences were determined for each subject. The 7 paranormal statements were: Q1: "Sometimes I can read another person's thoughts;" Q2: "Once I thought about a person whom I hadn't seen for a while and then saw the same person a few minutes later;" Q3: "My soul sometimes leaves my body;" Q4: "I have heard an inner voice call my name;" Q5: "As a child I played with an imaginary friend;" Q6: "Two or three times in my life there have been a few brief moments when I felt very close to a Universal Consciousness," and Q7: "An inner voice has told me where to find something and it was actually there." (The statements were distributed throughout the inventory.) All analyses were completed using SPSS software on a DEC 2020 System Computer.

The bivariate correlation coefficients (standard errors of the estimate in parenthesis) for the relationship between the percentage of positive responses on the paranormal cluster and on the temporal lobe cluster (the predictor) were 0.60 (0.16) and 0.72 (0.15) for Groups I and II, respectively; both correlations were statistically significant ($p < .001$). The slopes and intercepts for the equations for the two groups were 0.96 (0.01) and 1.34 (−0.03), respectively. Multiple regression analyses with four subclusters of TLS items that reflected increasing degrees of strangeness (Persinger, 1984) produced multiple Rs with comparable magnitudes and indicated significant contributions from each of the four indicated variables. The paranormal scores ranged from 0 to 100 ($M = 32$) and 0 to 86 ($M = 26$) for Groups I and II while the temporal-lobe-sign scores ranged from 0 to 76 ($M = 30$) and 0 to 62 ($M = 21$) for the two groups, respectively.

To determine whether or not these correlations reflected some shared source of variance with the propensity to answer "yes" to any statement, partial correlation analyses were completed holding the shared variance associated with either the psychological cluster or the odd statement cluster constant. For Group I, both first-order r values were 0.57 ($df = 105$) when these two

clusters were held constant (separately). For Group II, the rs were 0.67 and 0.71 ($df = 38$) when these two clusters were held constant. These results indicated that the paranormal-TLS correlations were not artifacts of simple "yes" responding or due to a response profile to answer affirmatively to any usual experiential statement.

Breakdowns of the groups and statements into subcomponents to evaluate internal homogeneity supported the consistency of the results. Separate correlations for subjects who reported religious experiences ($n = 23$) versus those who did not ($n = 85$) for Group I indicated zero-order correlations (standard errors of the estimate in parentheses) of 0.74 (0.19) and 0.55 (0.15), respectively ($p < .001$) between the paranormal experience and the TLS scores. For Group II, the 33 subjects who reported "no" religious experience gave an r of 0.56 (0.14) while the 8 who answered "yes" to this question yielded an r of 0.79 (0.06) between the two clusters. There were no significant sex differences between scores on the TLS items or paranormal clusters. Weak ($p = .01$) negative correlations were evident between age (19 to 59 yr.) and TLS (—0.25) and paranormal (—0.24) scores for Group I only.

Chi-squared analyses for each of the seven statements for each of the two groups indicated that the statements were not redundant. The highest *phi* coefficients occurred between Q4 and Q7 ($r = 0.31$ and 0.46 for Groups I and II) and between Q4 and Q6 ($r = 0.30$ and 0.53); all other coefficients were ≤ 0.20. One-way analysis of variance for the TLS scores as a function of the answer to each of the seven questions indicated that the largest effects were due to Q1, Q2, and Q4. Q3, Q6, and Q7 displayed intermediate (but significant) effects while Q5 was significant statistically only for Group I. Omega-squared estimates for Group I only for the amount of explained variance in the TLS scores for Q1, Q2, and Q4 ranged from 10% to 14% while the other questions ranged from 7 to 9%. The means of the TLS scores for the groups who answered "yes" to Q1 to Q7 were always higher than those who reported "no."

These results support the hypothesis that people who report paranormal experiences also report temporal lobe signs. They were derived from the reports of people (Persinger, 1983) with known or strongly suspected focal deep temporal lobe stimulation. References to alterations in space-time perspectives, intense personal meaningfulness, and the realistic (although dream-like) interpretation are shared by both complex partial epileptic and paranormal experients. Neither the hypothesis nor the present data indicate that paranormal experiences are ictal events. In fact, the general hypothesis predicts that both types of phenomena originate from similar portions of the hippocampal-amygdaloid-mesiobasal complex. However, there may be a variety of different exogenous or endogenous precipitating stimuli.

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